

**NUS Graduate School for Integrative Sciences and Engineering
Research Project Write-up**

Title of Project : Analysis and Synthesis for Media Aesthetics

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Short Description

Computational media aesthetics aims to bring in computational procedures into artistic multimedia works. Typically, this involves digital audio and video in film and TV-program making. There are many possibilities for deep computer science and mathematical techniques to be developed for applications to the arts.

An example is of intent enhancement in home videos. The main problem here is home videos produced by ordinary people are often not as good or exciting as professional movies. There are two major ways in which intent can be corrected and/or improved and/or changed:

1. Artifact Removal: The first level of such changes is artifact removal such as shakes and blurs.
2. Intent modification: The third level of video processing is trying to modify intent, or introduce one where none is evident. This is required when a user wants to exploit the full potential of his footage, or want to test his creative skills. This includes digital special effects and video content enhancement.

Our preliminary work in this area can be seen here:

<http://www.comp.nus.edu.sg/~mohan/papers/intents.pdf>

Another example is the video analogies technique developed by our group helps in bringing high quality cinematographic ideas into home videos:

http://www.comp.nus.edu.sg/~mohan/papers/video_analogies.pdf

The final example is the development of novel techniques for mixing appropriate audio with video:

http://www.comp.nus.edu.sg/~mohan/papers/av_mixing.pdf

There are still many unsolved problems in this emerging area --especially in the area of video post-production as well as helping amateurs produce content which is more professional-like.